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DIGIMARC CORPORATION
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EXAMINER

PYZOCHA, MICHAEL J

| ART UNIT | PAPER NUMBER |
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2137

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/776,021

Applicant(s)

RHOADS, GEOFFREY B.

Examiner

Michael Pyzocha

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Claims 1-49 are pending.
2. Amendment filed 06/10/2005 has been received and considered.

Election/Restrictions

3. The requirement for restriction of claims 27 and 39 has been withdrawn based on the arguments submitted on 06/10/2005.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 18-21, 23-24, 28, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton (U.S. 5,646,997) and further in view of Seth-Smith et al (US 4890319).

As per claim 18, Barton discloses encoding a photograph with a steganographic message, (see column 6 lines 51-60); the message identifies a corresponding message in a database (see

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column 2 lines 64-67), and the database record detailing information relating to the photograph (see column 6 lines 51-60).

Barton fails to disclose the message can be correctly decoded despite alteration of the image that alters a representation of the steganographic message.

However, Seth-Smith et al teach a method to reduce system errors caused by alterations (see column 14 lines 61-68).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use Seth-Smith et al's method of encoding to encode the images of Barton.

Motivation to do so would have been to reduce overall system errors.

As per claim 19, the modified Barton and Seth-Smith et al system discloses the message comprising an index number (see Barton column 6 lines 51-60).

As per claim 20, the modified Barton and Seth-Smith et al system discloses the information identifies the person associated with the corresponding image (see Barton column 6 lines 51-60).

As per claim 21, the modified Barton and Seth-Smith et al system discloses the person being the photographer (see Barton

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column 6 lines 51-60 where "the creator of the block" would be the photographer; the creator of the image).

As per claim 23, the modified Barton and Seth-Smith et al system discloses the steganographic message conveying plural digital bits (see Barton column 6 lines 51-60).

As per claim 24, the modified Barton and Seth-Smith et al system discloses the message being dispersed across the corresponding image (see Barton column 7 lines 31-33).

As per claim 28, the modified Barton and Seth-Smith et al system discloses a computer storage medium having computer instructions for performing the method (see Barton column 9 lines 48-55).

As per claim 46, the modified Barton and Seth-Smith et al system discloses alteration by lossy compression/decompression of data (see Barton column 4 line 44 through column 5 line 9).

6. Claims 1-6, 9-16, 29-33, 35-36, 45, 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton further in view of Seth-Smith et al and further in view of NEKO (webpage poster).

As per claim 1, Barton discloses encoding an image with a steganographic message (see column 6 lines 51-60 where the data block can be an image as described in column 4 lines 58-65 and a photographic image is described in column 1 lines 23-33) and the

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steganographic message associates information with each image (see column 6 lines 51-60 where the meta-data is associated with each image).

Barton fails to disclose the creation of a photo collage with plural photographic images printed on a common page and the steganographic image being robust so it could be printed.

However, NEKO discloses a photographic collage with multiple images (see NEKO page 1) and Seth-Smith et al disclose a robust encoding (see column 14 lines 61-68).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the steganographic process of Barton with the creation of NEKO's photo collage and the robust encoding of Seth-Smith et al.

Motivation to do so would have been to prevent the unauthorized use and distribution of a document (see Barton column 1 lines 45-51) and to reduce overall system errors (see Seth-Smith et al column 14 lines 61-68).

As per claim 2, the modified Barton, Seth-Smith et al and NEKO method discloses the information identifies the person associated with the corresponding image (see Barton column 6 lines 51-60).

As per claim 3, the modified Barton, Seth-Smith et al and NEKO method discloses the person being the photographer (see

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Barton column 6 lines 51-60 where "the creator of the block" would be the photographer; the creator of the image).

As per claim 4, the modified Barton, Seth-Smith et al and NEKO method discloses the information associated with each image being stored as a record in a database (see Barton column 2 lines 64-67 where the meta-data is as described in column 6 lines 51-60).

As per claim 5, the modified Barton, Seth-Smith et al and NEKO method discloses the steganographic message conveying plural digital bits (see Barton column 6 lines 51-60).

As per claim 6, the modified Barton, Seth-Smith et al and NEKO method discloses the message being dispersed across the corresponding image (see Barton column 7 lines 31-33).

As per claim 9, the modified Barton, Seth-Smith et al and NEKO method discloses a computer storage medium having computer instructions for performing the method (see Barton column 9 lines 48-55).

As per claim 10, the modified Barton, Seth-Smith et al and NEKO method discloses a photo collage being produced (see NEKO page 1).

As per claim 11, the modified Barton, Seth-Smith et al and NEKO method discloses a storage medium having a photo collage stored on it with plural photographic images (see NEKO page 1),

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each embedded with a steganographic message and the messages associate information corresponding to each image (see Barton column 6 lines 51-60) wherein the message can be correctly decoded despite alterations (see Seth-Smith et al column 14 lines 60-68).

As per claim 12, the modified Barton, Seth-Smith et al and NEKO method discloses the information identifies the person associated with the corresponding image (see Barton column 6 lines 51-60).

As per claim 13, the modified Barton, Seth-Smith et al and NEKO method discloses the person being the photographer (see Barton column 6 lines 51-60 where "the creator of the block" would be the photographer; the creator of the image).

As per claim 14, the modified Barton, Seth-Smith et al and NEKO method discloses the information associated with each image being stored as a record in a database (see Barton column 2 lines 64-67 where the meta-data is as described in column 6 lines 51-60).

As per claim 15, the modified Barton, Seth-Smith et al and NEKO method discloses the steganographic message conveying plural digital bits (see Barton column 6 lines 51-60).

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As per claim 16, the modified Barton, Seth-Smith et al and NEKO method discloses the message being dispersed across the corresponding image (see Barton column 7 lines 31-33).

As per claim 29, the modified Barton, Seth-Smith et al and NEKO method discloses a photo collage being produced (see NEKO page 1).

As per claim 30, the modified Barton, Seth-Smith et al and NEKO method discloses a storage medium with a photograph represented on it (see Barton column 1 lines 15-32 and NEKO page 1), encoding a photograph with a steganographic message, (see Barton column 6 lines 51-60), the message identifies a corresponding message in a database (see Barton column 2 lines 64-67), and the database record detailing information relating to the photograph (see Barton column 6 lines 51-60) wherein the message can be correctly decoded despite alterations (see Seth-Smith et al column 14 lines 60-68).

As per claim 31, the modified Barton, Seth-Smith et al and NEKO method discloses the message comprising an index number (see Barton column 6 lines 51-60).

As per claim 32, the modified Barton, Seth-Smith et al and NEKO method discloses the information identifies the person associated with the corresponding image (see Barton column 6 lines 51-60).

As per claim 33, the modified Barton, Seth-Smith et al and NEKO method discloses the person being the photographer (see Barton column 6 lines 51-60 where "the creator of the block" would be the photographer; the creator of the image).

As per claim 35, the modified Barton, Seth-Smith et al and NEKO method discloses the steganographic message conveying plural digital bits (see Barton column 6 lines 51-60).

As per claim 36, the modified Barton, Seth-Smith et al and NEKO method discloses the message being dispersed across the corresponding image (see Barton column 7 lines 31-33).

As per claims 45 and 47, the modified Barton, Seth-Smith et al and NEKO system discloses alteration by lossy compression/decompression of data (see Barton column 4 line 44 through column 5 line 9).

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Barton and Seth-Smith et al system as applied to claim 18 above, and further in view of Tetrick et al (U.S. 4,675,746).

As per claim 22, Barton and Seth-Smith et al fail to disclose the information relating to the photograph including contact information.

However Tetrick et al discloses the information relating to the photograph including contact information (see column 5 lines

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4-22 where the alphanumeric data is as described in column 2 lines 64-66).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the contact information of Tetrick et al with the method for encoding a message of the Barton and Seth-Smith et al system.

Motivation to do so would have been to allow for confirming the authenticity of the image (see Tetrick et al column 5 lines 14-17).

8. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton and Seth-Smith et al as applied to claim 18 above, and further in view of Braudaway et al (U.S. 5,530,759).

As per claim 25, Barton and Seth-Smith et al method fail to disclose the use of pseudo-random noise when encoding.

However Braudaway et al discloses the use of pseudo-random noise when encoding (see column 5 lines 41-60).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the pseudo-random noise of Braudaway et al when encoding the message of Barton and Seth-Smith et al.

Motivation to do so would be to adjust the difficulty of removing the message (see column 5 lines 48-56).

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As per claims 26, the modified Barton, Seth-Smith et al and Braudaway et al method discloses the encoding changes the luminance of a majority of the pixels in each photographic image (see Braudaway et al column 2 lines 6-14 and column 5 lines 6-15).

9. Claims 27 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Barton and Seth-Smith system and further in view of Bianco (U.S. 4,359,633).

As per claims 27 and 39, the modified Barton and Seth-Smith discloses encoding a photograph with a steganographic message; the message identifies a corresponding message in a database and the database record detailing information relating to the photograph (see Barton and Seth-Smith as applied to claim 18).

The modified Barton and Seth-Smith fails to disclose the steganographic message is a code pre-exposed on emulsion media, onto which a photograph is later exposed.

However Bianco discloses a code pre-exposed on emulsion media, onto which a photograph is later exposed (see column 4 line 65 through column 5 line 12).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the method of adding a code to an emulsion media with Barton's method.

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Motivation to do so would have been to enhance the reproductively of the code (see Bianco column 5 lines 7-12).

10. Claims 7-8, 17, 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Barton, Seth-Smith et al and NEKO method as applied to claims 1, 11, 30 above, and further in view of Braudaway et al (U.S. 5,530,759).

As per claims 7, 17, and 37 the modified Barton, Seth-Smith et al and NEKO method fails to disclose the use of pseudo-random noise when encoding.

However Braudaway et al discloses the use of pseudo-random noise when encoding (see column 5 lines 41-60).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the pseudo-random noise of Braudaway et al when encoding the message of the modified Barton, Seth-Smith et al and NEKO method.

Motivation to do so would be to adjust the difficulty of removing the message (see column 5 lines 48-56).

As per claims 8 and 38, the modified Barton, Seth-Smith et al, NEKO and Braudaway et al method discloses the encoding changes the luminance of a majority of the pixels in each photographic image (see Braudaway et al column 2 lines 6-14 and column 5 lines 6-15).

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11. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Barton, Seth-Smith et al and NEKO method as applied to claim 30 above, and further in view of Tetrick et al (U.S. 4,675,746).

As per claim 34, the modified Barton, Seth-Smith et al and NEKO method fails to disclose the information relating to the photograph including contact information.

However Tetrick et al discloses the information relating to the photograph including contact information (see column 5 lines 4-22 where the alphanumeric data is as described in column 2 lines 64-66).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the contact information of Tetrick et al with the method for encoding a message of Barton, Seth-Smith et al and NEKO.

Motivation to do so would have been to allow for confirming the authenticity of the image (see Tetrick et al column 5 lines 14-17).

12. Claims 40-42, 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton in further view of Seth-Smith et al and further in view of Conner et al (U.S. 5,579,393).

As per claim 40, Barton discloses storing an image (see column 1 lines 15-32), encoding a photograph with a

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steganographic message, (see column 6 lines 51-60), and the message aids in the authentication of the image (see column 5 lines 58-67).

Barton fails to disclose the images specifically being medical images and the message being correctly decodable despite alteration.

However, Conner et al discloses the use of medical images (see column 2 lines 19-39) and Seth-Smith et al disclose decoding despite alterations (see column 14 lines 60-68).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the method of authentication from Barton with the medical files of Conner et al and the encoding method of Seth-Smith et al.

Motivation to do so would have been to reduce the chances of fraudulent medical documents being transferred (see Conner et al column 1 lines 53-65) and to reduce system errors (see Seth Smith column 14 lines 60-68).

As per claim 41, the modified Barton, Seth-Smith et al and Conner et al discloses the message aiding in protecting the image from tampering (see Barton column 5 lines 32-41).

As per claim 42, the modified Barton, Seth-Smith et al and Conner et al discloses the message being dispersed across the corresponding image (see Barton column 7 lines 31-33).

As per claim 48, the modified Barton, Seth-Smith et al and Conner system discloses alteration by lossy compression/decompression of data (see Barton column 4 line 44 through column 5 line 9).

13. Claims 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Barton, Seth-Smith et al and Conner et al method as applied to claim 40 above, and further in view of Braudaway et al.

As per claim 43, the modified Barton, Seth-Smith et al and Conner et al method fails to disclose the use of pseudo-random noise when encoding.

However Braudaway et al discloses the use of pseudo-random noise when encoding (see column 5 lines 41-60).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the pseudo-random noise of Braudaway et al when encoding the message of the modified Barton, Seth-Smith et al and Conner et al method.

Motivation to do so would be to adjust the difficulty of removing the message (see column 5 lines 48-56).

As per claim 44, the modified Barton, Seth-Smith et al, Conner et al and Braudaway et al method discloses the encoding changes the luminance of a majority of the pixels in each

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photographic image (see Braudaway et al column 2 lines 6-14 and column 5 lines 6-15).

14. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Barton and Seth-Smith et al system as applied to claim 18 above, and further in view of Mizuno (EP 0296608).

As per claim 49, the modified Barton and Seth-Smith et al system fails to disclose varying the energy of encoding based on attributes of the photograph.

However, Mizuno teaches such a limitation (see page 6 lines 28-40).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to vary the energy of the modified Barton and Seth-Smith et al encoding system according to Mizuno.

Motivation to do so would have been to reduce the amount of information needed (see page 6 lines 28-40).

Response to Arguments

15. Applicant's arguments with respect to claims 1-49 have been considered but are not persuasive. Applicant argues: Seth-Smith cannot be combined with Barton because Seth-Smith is related to teletext data; Barton's authentication method would be

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inoperable if combined with Seth-Smith; Examiner uses hindsight to combine references; Examiner fails to address "photocollage" and "plural photographic images" in claim 1.

Regarding Applicant's argument that Seth-Smith cannot be combined with Barton because Seth-Smith is related to teletext data, the Seth-Smith reference is merely relied upon for its teaching of robust encoding and not the specifics of the data being encoded.

Regarding Applicant's argument that Barton's authentication method would be inoperable if combined with Seth-Smith, Barton's authentication in view of Seth-Smith's robustness would be operable because the unmodified Barton looks at a the digital signature of a certain number of bits and if the signature is altered, as in the claimed invention, the authentication would fail. However, if we use Seth-Smith's teaching and use a byte in place of each of each bit, the new digital signature could survive alterations.

Regarding Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at

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the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Regarding Applicant's argument that the Examiner fails to address "photocollage" and "plural photographic images" in claim 1, the NEKO reference was used in the previous action to make up for the deficiencies of the modified Barton and Seth-Smith system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Pyzocha whose telephone number is (571) 272-3875. The examiner can normally be reached on 7:00am - 4:30pm first Fridays of the bi-week off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJP

Matthew Smithers
MATTHEW SMITHERS
PRIMARY EXAMINER
Art Unit 2137